

CLAIMS

I claim:

- 1 1. A differential radio comprising:
 - 2 a differential antenna having an input and an output;
 - 3 a differential duplexer, generating two receiving signals and receiving two
 - 4 transmitting signals, electrically connected to the input and output of the
 - 5 differential antenna;
 - 6 a differential low noise amplifier, receiving the two receiving signals,
 - 7 generating two LNA signals;
 - 8 a first differential filter receiving the two LNA signals and generating a
 - 9 first differential filter signal;
 - 10 a first differential mixer receiving the first differential signal and
 - 11 generating a first differential mixer output signal;
 - 12 a signal conditioning circuit, receiving the first differential mixer output
 - 13 signal, generating a conditioned differential signal;
 - 14 a second differential mixer, receiving the conditioned differential signal,
 - 15 generating a second differential mixer output signal;
 - 16 a second differential filter, receiving the second differential mixer output
 - 17 signal, generating a second differential filter signal; and
 - 18 a differential power amplifier receiving the second differential filter signal
 - 19 and generating the two transmitting signals.

- 1 2. A differential radio as in claim 1, wherein the duplexer is an FBAR.

- 1 3. A differential radio as in claim 1, wherein the differential antenna is a
- 2 Yagi-Uda.

- 1 4. A differential radio as in claim 3, wherein the differential antenna is
- 2 incorporated into a printed circuit board.

- 1 5. A differential radio as in claim 1, the differential power amplifier
- 2 comprising:

3 an input matching network having a differential input and a first and
4 second IMN output;
5 a first field effect transistor (FET), having a gate connected to the first
6 IMN output;
7 a first capacitor, connected to the drain of the first FET;
8 a second FET, having a gate connected to the first capacitor;
9 a third FET, having a source connected to the source of the second FET at
10 a first node;
11 an output matching (OMN), having a first input connecting to the drain of
12 the second FET and a second input connecting to the drain of the third FET;
13 a first inductor connecting between the first node and ground;
14 a second capacitor connected to the gate of the third FET;
15 a fourth FET having a drain connected to the second capacitor, a gate
16 connected to the second IMN output, a source connected to the source of the first
17 FET at a second node; and
18 a second inductor connects between node B and ground.

1 6. A differential radio as in claim 5, wherein the duplexer includes film
2 bulk acoustic resonators.

1 7. A differential radio as in claim 5, wherein the differential antenna is
2 incorporated into a printed circuit board.